



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

06/02/2003

NORMAN R. KLIVANS  
C/O SKJERVEN MORRILL MACPHERSON  
FRANKLIN & FRIEL LLP  
25 METRO DRIVE SUITE 700  
SAN JOSE, CA 95110

EXAMINER

DO, ANH HONG

ART UNIT

CLASS-SUBCLASS

2624

382-166000

DATE MAILED: 06/02/2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/351,930	07/12/1999	KONSTANTINE I. IOURCHA	4325	1450

TITLE OF INVENTION: FIXED-RATE BLOCK-BASED IMAGE COMPRESSION WITH INFERRED PIXEL VALUES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300	\$0	\$1300	09/02/2003

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
- ☐ Applicant claims SMALL ENTITY status.  
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
Alexandria, Virginia 22313-1450  
Fax (703)746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

**CURRENT CORRESPONDENCE ADDRESS** (Note: Legibly mark-up with any corrections or use Block 1)  
7590 06/02/2003

**NORMAN R. KLIVANS  
C/O SKJERVEN MORRILL MACPHERSON  
FRANKLIN & FRIEL LLP  
25 METRO DRIVE SUITE 700  
SAN JOSE, CA 95110**

**Note:** A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/351,930	07/12/1999	KONSTANTINE I. IOURCHA	4325	1450

**TITLE OF INVENTION:** FIXED-RATE BLOCK-BASED IMAGE COMPRESSION WITH INFERRED PIXEL VALUES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300	\$0	\$1300	09/02/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
DO, ANH HONG	2624	382-166000

- 1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).**
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

- 2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.**
- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_

## **3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)**

**PLEASE NOTE:** Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) ☐ individual ☐ corporation or other private group entity ☐ government

**4a. The following fee(s) are enclosed:**

- ☐ Issue Fee
- ☐ Publication Fee
- ☐ Advance Order - # of Copies \_\_\_\_\_

**4b. Payment of Fee(s):**

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

**NOTE:** The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, Virginia 22313-1450.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMIT THIS FORM WITH FEE(S)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/351,930	07/12/1999	KONSTANTINE I. IOURCHA	4325	1450

7590 06/02/2003

NORMAN R. KLIVANS  
C/O SKJERVEN MORRILL MACPHERSON  
FRANKLIN & FRIEL LLP  
25 METRO DRIVE SUITE 700  
SAN JOSE, CA 95110

EXAMINER
----------

DO, ANH HONG

ART UNIT	PAPER NUMBER
----------	--------------

2624

DATE MAILED: 06/02/2003

14

**Determination of Patent Term Extension under 35 U.S.C. 154 (b)**  
(application filed after June 7, 1995 but prior to May 29, 2000)

The patent term extension is 0 days. Any patent to issue from the above identified application will include an indication of the 0 day extension on the front page.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (<http://pair.uspto.gov>)

Any questions regarding the patent term extension or adjustment determination should be directed to the Office of Patent Legal Administration at (703)305-1383.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/351,930	07/12/1999	KONSTANTINE I. IOURCHA	4325	1450

7590 06/02/2003

NORMAN R. KLIVANS  
C/O SKJERVEN MORRILL MACPHERSON  
FRANKLIN & FRIEL LLP  
25 METRO DRIVE SUITE 700  
SAN JOSE, CA 95110

EXAMINER

DO, ANH HONG

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 06/02/2003

## Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003; Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: <http://www.uspto.gov/main/howtofees.htm>.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

# Notice of Allowability

Application No.  
09/351,930

Applicant(s)  
Iourcha et al.

Examiner  
Anh Hong Do

Art Unit  
2624



--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course.

**THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Terminal Disclaimer and Amendment on 5/8/2003.

2. ☒ The allowed claim(s) is/are 1-7, 13, 15, 16, 21, 22, 37-45, and 56.

3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.

4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

(a) ☐ The translation of the foreign language provisional application has been received.

6. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

8. ☒ CORRECTED DRAWINGS must be submitted.

(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.

(b) ☒ including changes required by the proposed drawing correction filed Dec 4, 2002, which has been approved by the examiner.

(c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1 ☒ Notice of References Cited (PTO-892)

3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

5 ☐ Information Disclosure Statement(s) (PTO-1449), Paper No(s). \_\_\_\_\_

7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

9 ☐ Other

2 ☐ Notice of Informal Patent Application (PTO-152)

4 ☐ Interview Summary (PTO-413), Paper No. \_\_\_\_\_

6 ☐ Examiner's Amendment/Comment

8 ☐ Examiner's Statement of Reasons for Allowance

*ANH HONG DO*  
ANH HONG DO  
PRIMARY EXAMINER  
ART UNIT 2624

Art Unit: 2624

## **DETAILED ACTION**

### ***Drawings***

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/04/2002 have been received and approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.
2. Claims 1-7, 13, 15, 16, 21, 22, 37-45 and 56 are allowed.
3. The following is an examiner's statement of reasons for allowance:
  - \* The terminal disclaimer filed on 5/8/2003 has overcome the rejection under the judicially created doctrine of obviousness-type double patenting to claims 1-7, 13, 15, 16, 21 and 22;
  - \* Rejected claims 23-36 and 46-55 have been canceled;
  - \* The present invention provides a new system and method for processing an image that can maximize the accuracy of compressed images while minimizing storage, memory bandwidth requirements, and decoding hardware complexities, while also compressing image data blocks into convenient sizes to maintain alignment for random access to any one or more pixels (specification, page 5, lines 3-7). Particularly, the new system and method comprise the following features, which the prior art, taken either singly or in combination, does not teach:

Art Unit: 2624

- the color quantizer having a selection module for computing a set of parameters from the set of colors, the at least one codeword derived from the set of parameters; and an encoded image composer for receiving and ordering the encoded image blocks into a data file (see independent claim 1);

- an encoded image decomposer, coupled to receive an image data file having at least one compressed image block, for breaking the encoded image data file into individual compressed image blocks, each compressed image block having at least one associated codeword, each codeword generated by computing a set of parameters, partitioning the set of parameters into a plurality of partitions, and computing each codeword from one of the partitions; an image composer for ordering the decompressed image blocks in an output file (see independent claim 5);

- encoding each image block to generate an encoded image block for each image block by computing a set of codewords from the set of colors, computing a set of computed colors using the set of codewords, and mapping each original color to one of the computed colors or one of the codewords to produce an index for each original color; composing the modified header and each encoded image block in a file to generate the encoded image (see independent claim 13);

- each individual encoded image block having a set of codewords and a set of indices; calculating at least one quantized color level for the encoded image block using the set of codewords; mapping at least one index from the set of indices to one of the calculated quantized color levels or to a codeword from the set of codewords (see independent claim 16);

Art Unit: 2624

- including at least one codeword computed from a set of parameters, the set of parameters computed from a set of colors within an original image block; a block address computation module, coupled to receive each codeword from the header information, for computing an address of an encoded image block having the identified pixel; a block fetching module, coupled to receive the encoded image block portion and the computed address, for fetching the encoded image block having the identified pixel (see independent claims 21 and 22);

- fitting a geometric element to the first set of color points so that the geometric element includes a second set of color points having a minimal moment of inertia when fitted to the center of gravity of the first set of color points; computing a set of codewords from the second set of color points; using the indices by the mapping each of the first set of color points and the set of codewords to represent the first set of color points (see independent claim 37);

- fitting a geometric element to the first set of color point parameters associated with the block of pixel parameters so that the geometric element includes a subset of color point parameters having a minimal moment of inertia when fitted to the center of gravity; computing a set of codewords from the subset of color point parameters; representing the block of pixel parameters by using the set of codewords, and the block type, and each index produced by mapping (see independent claim 42);

- fitting a geometric element to the original colors so that the geometric element includes a set of colors having a minimal moment of inertia when fitted to the center of gravity of the original colors;- computing a set of codewords from the set of colors; generating the bitmap table



Art Unit: 2624

by mapping each original color to one of the at least three different colors (see independent claim 56).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Hong Do whose telephone number is (703) 308-6720.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700 or 4750. The fax phone number for this Group is (703) 872-9314.

May 30, 2003.



**ANH HONG DO**  
**PATENT EXAMINER**